

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**



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Application of Pacific Gas and Electric Company
To Revise Its Electric Marginal Costs, Revenue
Allocation, and Rate Design

Application 06-03-005
(Filed March 2, 2006)

**COMMENTS OF THE
CALIFORNIA MANUFACTURERS AND
TECHNOLOGY ASSOCIATION**

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In accordance with the prescribed schedule, the California Manufacturers and Technology Association (CMTA) hereby submits its comments in response to issues listed in Appendix A to the Assigned Commissioner's Ruling (ACR), issued in this proceeding on August 22, 2007.

CMTA is a trade association of over 500 members which operate in the manufacturing and technology fields. Most CMTA members have been on time-of-use (TOU) rates for many years. CMTA has been an active participant in utility rate proceedings and in recent proceedings concerning demand response programs and critical peak pricing (CPP). CMTA's comments are organized in accordance with the issues set forth in Appendix A and address most of the major questions raised there.

I. THE OBJECTIVES OF DYNAMIC PRICING

1. **Promoting Economically Rational Behavior.** CMTA generally agrees with the ACR that dynamic pricing should be a tool by which consumers can make efficient decisions and adjust their consumption accordingly. The overriding objective

should be to shift customers' consumption from high cost to lower cost time periods *whenever it is cost effective and feasible to do so.*

In this regard, CMTA submits that it is equally important that the expectations for dynamic pricing be realistic and should recognize that it is simply *not* feasible for some customers to shift consumption from one time period to another. Due to the nature of their operations, quite a few manufacturers are simply unable to shift any significant usage from higher to lower cost time periods without experiencing serious adverse consequences. For example, glass manufacturing (both flat glass and glass containers) is a continuous process, 24 hours a day, 365 days a year, whereby molten glass must be constantly maintained under precise temperature conditions. The nature of the process is such that any minor variation in conditions can cause a system upset which, in turn, would affect product quality and quantity. In short, glass manufacturing requires the maintenance of steady state conditions and continuous operation. Disruptions to the manufacturing process or reduced energy usage could cause molten glass to freeze in process, and thereby destroy plant equipment. As a consequence, a customer with this type of operation has a very high load factor, using essentially a constant amount of energy throughout the day. It is unrealistic to expect that any form of dynamic pricing could result in a shift in usage from one part of the day to another for such customers.

There are a number of other types of manufacturing operations which also cannot shift consumption from one period to another without causing a loss of production. In turn, lost production over the long-term likely would translate into employee layoffs or even more drastic measures. Even for those industrials who have some flexibility to shift production to less costly time periods, the customers must evaluate the impact of doing so

on their other operating costs. Thus, for example, if the savings in electric costs are outweighed by an increase in labor costs, the economically efficient decision is not to shift production. The Commission must recognize that customer decisions regarding dynamic pricing will not take place in a vacuum and that the customer can be expected to act in an economically rational manner in operating its business. Therefore, in establishing objectives for a dynamic pricing program, it is critical that the Commission recognize at the outset that due to the nature of their operations, many industrial customers will be unable to respond to dynamic pricing signals without adversely affecting production and employment at their facilities. One of the overriding objectives that should be established for dynamic pricing is to implement the program in a manner that does not adversely affect the State's economy.

Beyond the economic issues, however, it is important to recognize that an ill-designed program could produce unintended consequences. To the extent that a manufacturer, in order to respond to high day-ahead prices, decides to shut down production, it is quite likely that some or all of the energy usage will be shifted from the factory floor to the employees' air-conditioned living rooms. The expectation that changes in consumption from the industrial class alone will produce commensurate reductions in expected peaks may not reflect real-world conditions.

CMTA believes that the appropriate focus of the dynamic pricing program should be on those classes of customers for whom "comfort and convenience" electric usage constitutes a significant portion of their total consumption. Air conditioning loads clearly are a major driver behind peak period electric consumption. As a consequence, dynamic pricing can be an effective tool for encouraging customers to make efficient decisions

and to use less energy during high cost periods. By reducing usage during peak periods, customers will realize an economic benefit without experiencing any significant adverse impact on their business operations.

In addition, there are existing technologies available to automate responses to prices by adjusting heating, air conditioning, and lighting in widespread use in both residential and commercial settings. These technologies eliminate or minimize the need for any active response by the customer, making price response virtually painless.

In sum, dynamic pricing should be applied to those customer classes whose usage is responsible for driving the peak period demand. Conversely, application of dynamic pricing to large industrial customers would be misguided at best and counterproductive at worst.

2. **Rate Stability and Predictability.** Another key objective for the dynamic pricing program is to ensure rate stability and predictability. Customers need to know that the program parameters will not change drastically from year-to-year and that the same basic methodology will be used to establish rates. These features are essential for business customers to make plans for necessary investments, to determine the payback period for those investments, and to budget for future electric costs. The greater the certainty and predictability associated with a dynamic pricing tariff, the more attractive such a program will be to many customers.

3. **Cost Causation and Utility Cost Recovery.** A dynamic pricing policy based on cost causation principles goes hand-in-hand with the rate stability and predictability principles mentioned above. Cost causation establishes an objective standard which customers can rely upon for future planning purposes. CMTA also

supports utility cost recovery for reasonable costs incurred in establishing and implementing dynamic pricing policies; these costs should include a reasonable amount devoted to customer education. Over or undercollection of revenues as a result of the design of the dynamic pricing tariffs should be tracked and recovered from or remain within the customer tariff class in question. Most importantly, cost savings resulting from dynamic pricing should be returned to customers and should not be used to fund other programs. In the long term, dynamic pricing will be successful only if customers are allowed to engage in economically rational behavior. Siphoning off cost savings to fund some other program would clearly distort the price signals emanating from dynamic pricing, erode the credibility of the tariff, and increase customer dissatisfaction.

II. RATE OPTIONS

1. **Customer Eligibility and Rate Strategies.** CMTA believes that it is important to distinguish between reliability programs versus pricing options such as CPP or other forms of dynamic pricing. All customers – including DA and CCA – should be eligible for reliability programs. However, dynamic pricing programs which primarily focus on the time variant component of generation costs should be applicable only to bundled customers. DA and CCA customers have made their own supply arrangements with ESPs and any effort to impose dynamic pricing on such customers would likely disrupt their purchasing strategy and alter the economic relationship with their supplier.

With respect to types of rates, large industrial customers have had TOU rates for many years and, in many cases, have made investments in equipment and processes to maximize the value of those rates to their operations. For the reasons stated above, CMTA does not believe that CPP or other forms of dynamic pricing are well-suited to many industrial customers. Many industrial operations simply cannot shift load to other

time periods and have little or no “comfort and convenience” usage. For these reasons, CMTA’s strong preference is that the TOU rates and the existing TOU periods be left intact for customers with demands in excess of 500 kW. CMTA believes that the various types of dynamic pricing such as CPP, RTP, PTR are best suited to customers whose usage significantly increases during peak periods. However, if the Commission nevertheless proceeds to move beyond TOU rates for large customers, then as an alternative CMTA generally believes that some variation of RTP based on CAISO day-ahead prices should be offered, *assuming that customers are given real-time access to their meter data and that an appropriate methodology for establishing a customer’s baseline consumption is adopted*. Developing a specific rate design for any form of dynamic pricing for large customers will be a complex undertaking, with many complicated policy and practical aspects. As an example, for an RTP program that subjects only the customer’s usage in excess of its baseline consumption to real-time pricing, establishing the appropriate baseline can be problematic, especially in light of the many microclimates in California.

2. Voluntary, default with an opt-out, or mandatory program. CMTA submits that dynamic pricing tariffs should be voluntary. For business customers, their planning decisions are based not just on the dynamic pricing tariff, but also on how those tariffs impact other aspects of their operations. As a rational business person, the customer must consider the overall economic impact of dynamic pricing on its operations, and the customer is the only party in a position to make this assessment. Customers should be permitted to make the decision which makes overall economic sense for them. Given that many industrial customers cannot shift usage due to the nature

of their operations, it is especially important that any dynamic pricing program for these customers be entirely voluntary.

Second, substantial experience on the part of the Commission, utilities and customers is needed before a mandatory approach should even be considered. Customers need a predictable and stable dynamic pricing program to allow them to make any necessary investments in equipment and to enable them to recoup the cost of their investments over a period of several years. Any consideration of a mandatory program should come only after this experience is gained.

However, if a purely voluntary program is not adopted, then CMTA believes that a default tariff with an opt-out provision is the second-best approach. Again, CMTA believes that a successful dynamic pricing program is one which allows customers to make the correct economic decisions, rather than a program which is imposed on customers at the outset.

3. Rebates. CMTA believes that rebate programs are better suited to reliability programs goals rather than for dynamic pricing options. Rebate programs are expensive and are economical only if the overall program cost is less than the avoided peak period energy costs. Moreover, as a matter of fairness, if rebate programs are adopted for any customer class, the costs of the rebates should be recovered solely from the members of that class.

4. Automatic Load Controls. CMTA does not believe that automatic load controls are appropriate for large industrial customers which frequently have interrelated and complex processes. Clearly, automatic load control provisions should be strictly voluntary and at the option of the customers. It is CMTA's understanding that the use of

automatic controls for the air conditioning cycling program in Southern California generally has worked well and should be expanded.

5. Other Issues. In terms of the number of rate options that should be offered, CMTA generally supports a broad menu of options that will allow customers to pick and choose those options that are best suited for their operations. Ideally, different customer classes would have different menus with each menu being designed to reflect those rate options which are best suited to the customer class in question. The options also should provide separate load shifting and reliability programs for the class in question.

The rate options that are offered should provide clear and accurate price signals. Generally speaking, CMTA prefers “real time” prices such as those that will be available once the CAISO implements a day-ahead market. One of the problems with the various CPP proposals that have been made to date is that the critical peak price is a somewhat arbitrary and static proxy for actual market prices. CMTA would prefer a program that allows customers to react to actual market prices, assuming that customers also have real-time access to their meter data.

With respect to questions in the ACR concerning the expected response to various rate options, the only possible answer at this time is that customer responses will vary by customer class and types of usage. As explained above, some industrial customers will have little or no flexibility to shift usage and others will find that the costs significantly outweigh the savings. It should be beyond serious dispute that the greatest demand response will come from customers for whom space conditioning needs are a significant

portion of their total usage and from customers who have not previously been exposed to time-differentiated rate schedules.

Finally, CMTA supports bill protection measures for customers for at least the first year of any new program.

III. COMPONENTS OF DYNAMIC PRICING TARIFFS

1. **Time Variant Costs.** CMTA recommends that dynamic pricing reflect the energy component of generation costs. For large customers, fixed costs associated with customer, distribution, transmission and the capacity component of generation costs generally should continue to be reflected in customer and demand charges, the latter of which may vary on a seasonal basis. CMTA also believes that the time profile of dynamic rates should be aligned with the profile of the time variant costs. Thus, if the Commission seeks to implement RTP, CMTA believes that price information from the CAISO will be necessary. It is important that whatever CAISO prices are utilized, all applicable CAISO uplift charges also be incorporated into the price. The CAISO current real-time price does not include these incremental costs. Once the CAISO implements its Market Redesign and Technology Update (MRTU) on April 1, 2008, the day-ahead prices should reflect actual market prices plus the relevant uplift charges.

2. **Cost Recovery Mechanism.** Depending on the category of costs, CMTA generally supports the recovery of fixed charges either through a flat customer charge or a demand charge. In contrast, the time variant rate should be recovered through a usage rate (cents per kWh). Since the purpose of dynamic pricing is to cause customers to react in a rational manner to the time variant price signals, it is essential that the usage rate reflect only time variant costs. Other costs such as those associated with public purpose programs and various nonbypassable costs – which are currently recovered through a

usage charge – are essentially fixed costs which should be recovered through a flat or fixed rate.

With regard to the treatment of DA and CCA customers, the energy or commodity portion of their rate is established by contract between the customer and the ESP. Since these customers do not buy their energy from the utility, they should not be subject to that utility's dynamic pricing tariffs.

One of the questions included in Appendix A to the ACR is whether the rate design should differ depending on if a shortfall is forecast on a day-ahead or day-of basis. This question appears to confuse demand response programs with dynamic pricing. Traditional demand response programs, such as AC cycling and interruptible tariffs, should be used to address supply shortfalls whereas dynamic pricing should take a more granular approach and reflect generation costs in any given hour. As a practical matter for a demand response program to work, it is necessary to publish a price in advance of the shortfall event – such as on a day-ahead basis – so that customers can determine whether to respond during the event.

IV. RECOVERING THE REVENUE REQUIREMENT

Appendix A poses a number of questions concerning recovery of the utilities' revenue requirement. In terms of assuring reasonable revenue recovery, the first task is to allocate the revenue requirement among customer classes based on cost-causation principles. Cost-based rates then can be designed for customers within a given class using the billing determinants for each class and matching the billing determinants to the categories of cost as closely as possible. Over or under collection of the revenue requirement can be minimized by recovering fixed costs through fixed charges and recovering time variant energy costs through a usage charge. Since the customers'

collective response to dynamic pricing cannot be predicted with accuracy, some under or over collection of the time variant costs is likely. Consistency with cost of service principles requires that any such over or under collection be recovered from the class in question. Participation credits and hedging premiums should only be incorporated into the tariffs if they are cost-based. If hedging costs cannot be identified, then the tariffs should be revenue neutral. To the extent that incorporation of hedging premiums or participation credit results in a revenue over or under collection, the revenue over or under collection should be included in the rates of the schedule that caused the imbalance.

V. HEDGING

CMTA generally believes that customers should be allowed to hedge price risks in order to manage volatility. Indeed, there are a number of papers dealing with dynamic prices that address the importance of managing price risk in a dynamic price regime¹. One approach that has been used in other jurisdictions is a two part tariff where part of the customer's energy costs is recovered through a fixed charge and the rest is recovered through a dynamic rate. That is, under this type of mechanism, only the customers' incremental usage in excess of certain baseline usage would be subject to dynamic pricing. In this situation, a separate hedging mechanism is unnecessary in our view. CMTA is opposed to any rate design under which all of the customer's usage would be subject to the dynamic rates and no tools are made available to allow the customer to manage the price risk.

¹ See, for example, "Dynamic Pricing, Advanced Metering and Demand Response in Electricity Markets," Severin Borenstein, Michael Jaske, and Arthur Rosenfeld, Center for the Study of Energy Markets, WP 105, October 2002.

We are aware of various utilities in eastern markets that allow customers to purchase price hedges from the market. In theory, this appears to be a reasonable practice. However, the experience of industrial customers taking service in those jurisdictions is that price hedges are not available at reasonable prices. The result is that most industrial customers doing business in those markets are fully exposed to day-ahead prices, which is highly problematic. A third alternate is to allow the utility to offer a hedging product. In this event, the product should reflect the actual cost of the hedge and should be an option which the customer can accept or decline.

VI. SOURCES OF TRIGGERS AND PRICES

CMTA believes that for trigger-based rates such as CPP, the utility is in the best position to determine whether an event should be called. In many cases, the utilities already have established lines of communication directly with customers which will facilitate implementation of a CPP event.

As stated above, any RTP program should be tied to actual wholesale market prices such as the day-ahead prices that will be available once the MRTU is implemented next year. The CAISO's current real-time price does not include all of the costs associated with buying from the CAISO in that market.

In response to one of the questions in Appendix A, CMTA does not believe that implementation of a formal capacity market would have any direct correlation with the prices used to design RTP or other dynamic prices. A capacity market is designed to acquire resources based on long-term demand forecasts. The existence of Resource Adequacy programs generally, and capacity markets specifically, are intended to ensure that surplus capacity exists. Over the long term, that surplus will have the effect of

driving down scarcity prices. But on a day-ahead or real-time basis, a properly-constructed dynamic pricing program will reflect near-term scarcity pricing.

As previously indicated, CMTA believes that a two-part rate approach for RTP or dynamic pricing programs is appropriate. In addition, RTP tariffs should be tied to day-ahead prices since “same day” prices are too late to allow customer to respond.

VII. RESIDENTIAL ISSUES

CMTA has no comments on the residential rate issues at this time.

VIII. CRITICAL PEAK PRICING

In response to the questions on CPP set forth in Appendix A, CMTA again would emphasize that CPP is not a reliability program. Since CPP triggers are based on high prices under certain assumed system conditions, and not on reliability criteria, attempting to incorporate a reliability value into the tariff would be problematic and likely would distort the CPP signal.

The length of the CPP period must be carefully designed. To the extent that a business customer can shift load, some may not be able to do so for more than a few hours. Too long of a CPP period may force some businesses to shut down and send their employees home. In addition to causing economic hardship, this may result in the employees simply going home and turning on their air conditioners earlier than usual. Clearly, such a scenario would defeat the purpose of the CPP.

CMTA again would emphasize that industrial customer usage does not drive peak loads. Instead, it is clear that peak demands in most part of the State are largely driven by air conditioning loads of residential and commercial customers. Applying CPP and RTP programs to industrial customers is not likely to generate significant load reductions

during peak periods but may well produce adverse economic consequences for employers, employees, and the State.

IX. RELATIONSHIP TO RELIABILITY-ORIENTED AND OTHER DEMAND RESPONSE PROGRAMS

CMTA recommends that reliability and pricing programs be kept separate. This is necessary not only to avoid confusing customers but also to avoid confusing objectives and associated price signals. However, there is no reason that customers should not be allowed to participate simultaneously in both programs, as long as appropriate measures are implemented to prevent “double dipping.”

X. TIMING

The Commission must recognize that before time-differentiated tariffs can be implemented, it is essential that (1) appropriate interval meters be installed for each customer, and (2) customers have timely (*i.e.*, same day) access to meter data in order to be able to assess their response to time differentiated rates. In this latter regard, it bears emphasis that even for large customers with installed interval meters, the customers do not have access to their usage data until – at the earliest – the day after an event. Access to usage data on a real time basis by all customers is critical to the success of any time-differentiated tariff. Although individual residential customers may not avail themselves of real-time usage data, there are a number of vendors who – with access to such data on behalf of the customers – can offer a variety of valuable services to small customers and promote demand reductions.

CMTA submits that customer access to usage data in real time is the linchpin to successful time-differentiated rates.

XI. CUSTOMER EDUCATION

From the large customers' perspective, it will be important for the utilities to provide a well-structured educational seminar conducted by experts in the field to explain the new programs in detail. The utilities will have to spend time and effort to develop an educational program which can be presented in a concise and coherent fashion to large business customers. From CMTA members' experience, presentations by the utilities' account or marketing representatives will not adequately serve this purpose. As part of the program for large customers, the utilities also should offer a free audit of the customer's usage and facilities. In connection with its demand response programs, SCE has conducted such audits which CMTA members have found to be quite useful.

XII. ENABLING TECHNOLOGY

The importance of both interval meters *and* customer access to usage data on a real-time basis cannot be overstated. Unless both aspects are available, it makes little sense to implement dynamic pricing on a widespread basis.

CMTA also is extremely skeptical that the introduction of dynamic pricing will create a demand for technologies that will drive the market. Such wishful thinking is an inadequate substitute for concrete examples of available technologies that can be deployed in conjunction with dynamic pricing.

XIII. CONCLUSION

For the foregoing reasons, CMTA respectfully submits that (1) dynamic pricing programs should focus on those customer classes whose usage drives peak period demands; (2) large customers in excess of 500 kW should continue to operate under TOU rates with the existing TOU periods; (3) to the extent that any dynamic pricing program is applied to large customers, it should be offered on a voluntary basis; (4) for any RTP

proposals which incorporate a baseline usage concept, it is extremely critical that the method for establishing baselines reflect usage patterns in different micro-climates; and (5) customer access to usage data on a real-time basis is an essential predicate for dynamic pricing.

Respectfully submitted,



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October 5, 2007

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a copy of the foregoing “Comments of the California Manufacturers & Technology Association” upon each person designated on the official service list compiled in this proceeding.

Dated at Washington, D.C. this 5th day of October, 2007.



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